



P.C. 0217.99

PATENT

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

In re application of)
)
GUADALUPE M. ROJAS ET AL.) Group Art Unit 1616
) Examiner N. Levy
Urea and Nitrogen Based Compounds)
as Feeding Stimulants/Aggregants)
and Masking Agents of)
Unpalatable Chemicals for)
Subterranean Termites)
)
Serial No. 09/748,036)
)
Filed December 22, 2000)

The Honorable
The Commissioner of Patents
Sir:

DECLARATION UNDER 37 CFR 1.132

I, Guadalupe M. Rojas, depose and state that:

1. I am a coinventor of the above-identified patent application entitled "Urea and Nitrogen Based Compounds as Feeding Stimulants/Aggregants and Masking Agents of Unpalatable Chemicals for Subterranean Termites", filed on December 22, 2000 as serial no. 09/748,036.

2. I have reviewed and am familiar with the publication of Henderson et al. entitled "Feeding Stimulants to Enhance Bait Acceptance by Formosan Termites", presented at the 25th Annual

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an Envelope addressed to:
Commissioner for Patents, Alexandria, VA 22313-1450 on

October 15, 2003
(Date of Deposit)

Randall E. Deck
Name of Depositor

Signature

10/15/03
Date of Signature

Meeting of The International Research Group on Wood Preservation, in Bali, Indonesia, May 29 to June 3, 1994.

3. The patent application referred to in paragraph 1 discloses and claims a method for aggregating termites to a desired location by providing a composition which comprises less than or equal to about 1,000 ppm of a nitrogen containing compound which is an ammonium salt or amine containing compound (exclusive of natural amino acids, polypeptides, or proteins). The amount of the nitrogen containing compound provided is effective to stimulate termite feeding and/or mask the unattractiveness of other compounds, but is not so great as to be termiticidally effective.

4. Together with Juan A. Morales-Ramos and David R. Nimocks, III, I have unexpectedly discovered that the affinity or aggregation of termites to the nitrogen containing compounds referred to in paragraph 3, is significantly increased when they are used at concentrations less than or equal to about 1,000 ppm (i.e., 0.1%, by weight), in comparison to the use of the same compounds at higher levels, particularly greater than or equal to 2500 ppm. Moreover, we have further discovered that at these low levels (i.e., less than or equal to about 1,000 ppm), the same nitrogen containing compounds are effective for masking or camouflaging the presence of a wide variety of compounds from the

termites (such as insecticides, termite growth regulators, and colorants which are normally repellent to subterranean termites).

5. The Henderson *et al.* publication referred to in paragraph 2 discloses that specified concentrations of four nitrogen-containing compounds, urea and three L-amino acids, were found to increase bait acceptance by Formosan termites. With respect to urea, corrugated cardboard disc baits were soaked in either 0.1%, 0.5%, 1.0%, 2.0%, 4.0%, or 8% solutions of urea (w/v), dried, placed into plastic petri dishes with Formosan termites, and incubated at 27°C for 6½ days. Corrugated cardboard discs soaked in distilled water were used as controls. Following incubation, the discs were weighed to determine weight change as a measure of termite consumption (page 2 of the publication).

6. The Henderson *et al.* publication referred to in paragraph 2 disclosed, on page 3 thereof, that corrugated cardboard disc baits soaked in 1.0%, 2.0%, 4.0%, or 8% solutions of urea exhibited significantly greater consumption by the termites relative to untreated controls. Bait consumption increased with higher urea concentrations. However, the publication further disclosed that corrugated cardboard disc baits soaked in 0.1% and 0.5% solutions of urea were not consumed to a significantly greater extent than the untreated controls.

No statistically significant increase in termite feeding was observed following addition of these low concentrations of urea to the baits.

7. To determine the concentration of urea retained within the cardboard disc baits of the Henderson *et al.* publication referred to in paragraph 2, I prepared corrugated cardboard discs impregnated with 0.1% or 8% urea solutions (w/v) following the procedures described at page 2 of the publication. The 0.1% and 8% urea solutions (aqueous) were selected as these were the lowest and highest concentrations described in the publication. Discs were cut from corrugated cardboard using a #14 brass corkboarer, weighed, and then soaked in the appropriate urea solution for 15 minutes (five replicates each). After soaking for 15 minutes, the discs were removed from the urea solution, weighed while wet, and the weight of solution absorbed into the discs and the weight of urea in the discs calculated. The concentration of urea, in ppm, in the discs was then determined according to the formula:

$$\text{conc. ppm} = (\text{urea weight} / \text{total wet weight of cardboard}) \times 10^6.$$

The results are provided in Tables 1 and 2 attached hereto.

8. The results in Tables 1 and 2 show that corrugated cardboard discs soaked a 0.1% urea solution, which was the lowest concentration used by the Henderson *et al.* publication referred

to in paragraph 2, contained between approximately 539 and 787 ppm urea, with a mean concentration of approximately 687 ppm urea. Corrugated cardboard discs soaked a 8% urea solution, which was the highest concentration used by the publication, contained between approximately 56,350 and 60,294 ppm urea, with a mean concentration of approximately 58,741 ppm urea.

9. It is expected that the amount of urea retained in the cardboard discs soaked in the different urea solutions described in paragraphs 5-8 should be approximately proportional to the concentration of urea in the solution. This is confirmed by the data described in paragraph 8, wherein the mean concentration of urea in the discs soaked in the 8% solution was approximately 86 times greater than that of discs soaked in the 0.1% solution. Thus, the concentration of urea in the cardboard discs soaked in the 0.5% and 1% urea solutions of the Henderson *et al.* publication and described in paragraphs 5 and 6 should be approximately 5 and 10 times, the concentration of urea in the cardboard discs soaked in the 0.1% urea solution. The predicted concentration of urea in the cardboard discs of the publication soaked in 0.5% and 1% urea solutions would be approximately 3435 and 6870 ppm, respectively.

10. Because the Henderson *et al.* publication referred to in paragraph 2 disclosed that cardboard disc baits soaked in 0.5% or

lower solutions of urea were not consumed by termites to a significantly greater extent than the untreated controls, and that only cardboard disc baits soaked in 1.0% or greater solutions of urea exhibited significantly greater consumption, the publication would suggest that the minimum concentration of urea necessary to effect an increase in the consumption of baits by termites should be greater than approximately 3,435 ppm, and less than or equal to approximately 6,870 ppm.

11. The concentration of urea of less than or equal to about 1,000 ppm which is claimed in the patent application referred to in paragraph 1 is significantly less than the minimum effective concentration of urea which would be suggested by the Henderson et al. publication referred to in paragraph 2. Thus, it is unexpected that the claimed concentration of urea of less than 1,000 ppm would be effective to stimulate termites to feed and/or mask the attractiveness of other compounds.

12. That all statements made herein of their own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under Section 1001 of Title 18 of the United States Code, and

that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Executed Oct 7th, 2003.

M. M. Rojas
Guadalupe M. Rojas

attachment:

Tables 1 and 2 (one page)

TABLE 1. 0.1 % Urea

Dry wt (mg) Cardboard	Wet wt (mg)	H ₂ O + urea (mg)	Urea (mg)	Urea ppm in Cardboard
82	217	135	0.135	622.1198
77	167	90	0.09	538.9222
78	367	289	0.289	787.4659
67	260	193	0.193	742.3077
68	259	191	0.191	737.4517
			MEAN	685.6535

TABLE 2. 8% Urea

Dry wt (mg) Cardboard	Wet wt (mg)	H ₂ O + urea (mg)	Urea (mg)	Urea ppm in Cardboard
81	274	193	15.44	56350.36
87	324	237	18.96	58518.52
67	272	205	16.4	60294.12
77	295	218	17.44	59118.64
80	311	231	18.48	59421.22
			MEAN	58740.57